



Frugal Innovation : How to do More (and Better) with Less

Jaideep Prabhu

Enterprise Tuesday
November 17, 2015



UNIVERSITY OF
CAMBRIDGE
Judge Business School

ExecutiveEducation

Unique Features of Indian Innovators

Frugal

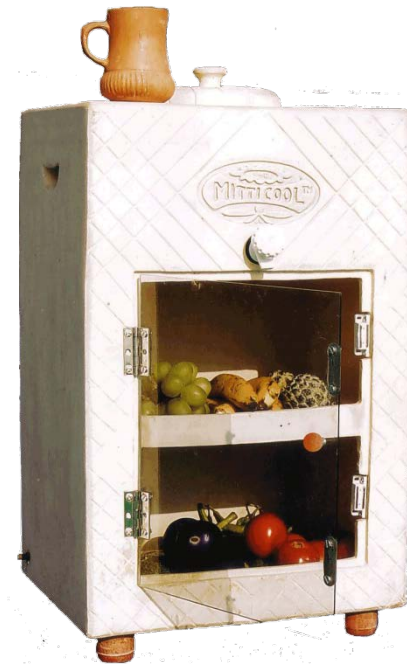
Flexible

Inclusive

Thinking Outside the (Ice) Box



Source: <http://gizmodo.com>



Source: <http://www.mitticool.in/>

Thinking Outside the (Hot) Box



Jugaad Innovation

The art of overcoming harsh constraints by improvising an effective solution using limited resources

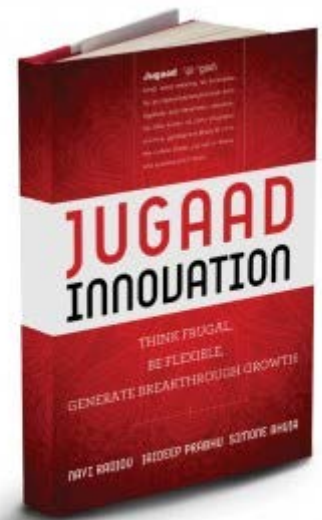
Gambiarra or *jeitinho* in Brazil

Kanju in Africa

Jiejian Chuangxin in China

Do-it-yourself (DIY) in the US

Systeme D in France



The Six Principles of Jugaad

1. Do more with less
2. Keep it simple
3. Think and act flexibly
4. Seek opportunity in adversity
5. Include the margin
6. Follow your heart

Social Entrepreneurs

Mansukh Bhai and the MittiCool Fridge



Dr Mohan's Mobile Diabetes Clinic



Source: <http://www.drvmohan.com/>



Source: <http://www.worlddiabetesfoundation.org/composite-2731.htm>



Harish Hande and SELCO

SELCO



SEARCH THIS SITE:

sustainable energy

CONTENT TAGS:

[Maps](#)

[Research](#)

[Links](#)

[Quick Facts](#)

[Chat](#)

[Contact](#)

[Help](#)

Course Information:

SELCO Case Study #126

Logged in as: honorstudent

Logged into Classroom:

Faculty:

Dr. J. Prabhu

Learners:

B. Donahue

J. Kibira

S. Ahuja

A. Betker

SELCO SOLAR

Posted On: April 16, 2009

Posted In:

SELCO Solar Pvt. Ltd, a social enterprise established in 1995, provides sustainable energy solutions and services to under-served households and businesses. It was conceived in an effort to dispel three myths associated with sustainable technology and the rural sector as a target customer base:

- 1) Poor people cannot afford sustainable technologies;
- 2) Poor people cannot maintain sustainable technologies;
- 3) Social ventures cannot be run as commercial entities.

SELCO aims to empower its customer by providing a complete package of product, service and consumer financing through gameena banks, cooperative societies, commercial banks and micro-finance institutions.



CAMBRIDGE
Judge Business School



Large Indian Organisations

Tata and the Nano



Source:<http://www.examiner.com/road-driver-in-national/world-s-cheapest-car-the-tata-nano>

Tata “Swachh” Water Filter



Multinationals in Emerging Markets

GE and Affordable Innovation

ECG machine designed specifically for
India's rural markets

Portable, light, battery operated, reliable,
cheap

Launched in China, and now in the US
after having got FDA approval



Siemens: Foetal Heart Monitor



Siemens' SMART Products

Simple, maintenance free, affordable, reliable, timely to market

Micro-processor cameras for Indian industrial markets

Processing lines in food industry or engine parts

Sees each biscuit in terms of colour and thickness

The Nokia 1100

Specifically for emerging markets:

Dustproof keypad and front face

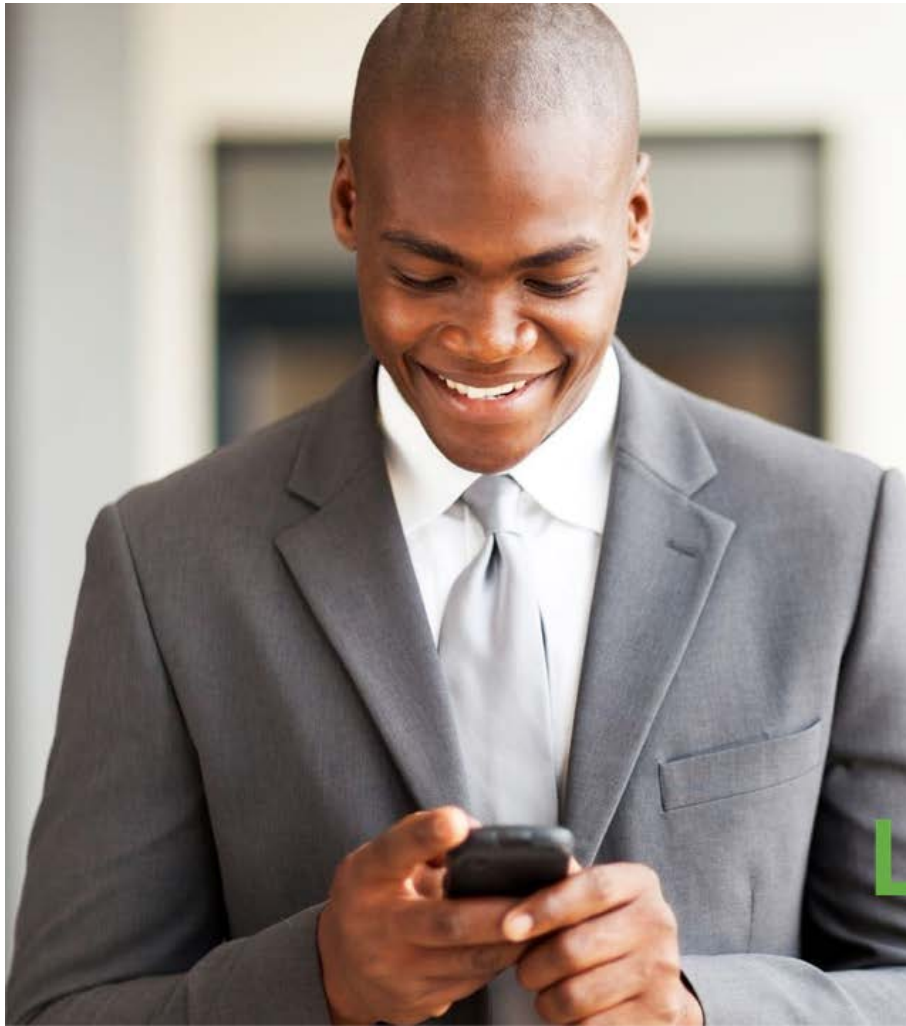
Built-in flashlight

Over 200 million sold since late 2003

World's best selling handset and consumer electronics device



Doing more (and better) with less



LIPA NA MOPESA

Doing More (and Better) with Less

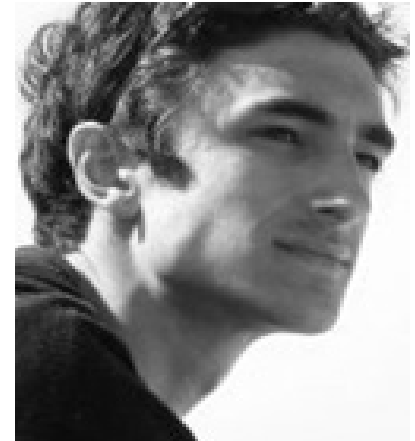


Photo: M-KOPA

Frugal Innovation in the West

Design for America and Swipe Sense

To solve problems in health care, education,
and energy in the US



Hospital acquired infections: 2 million people

100,000 deaths each year

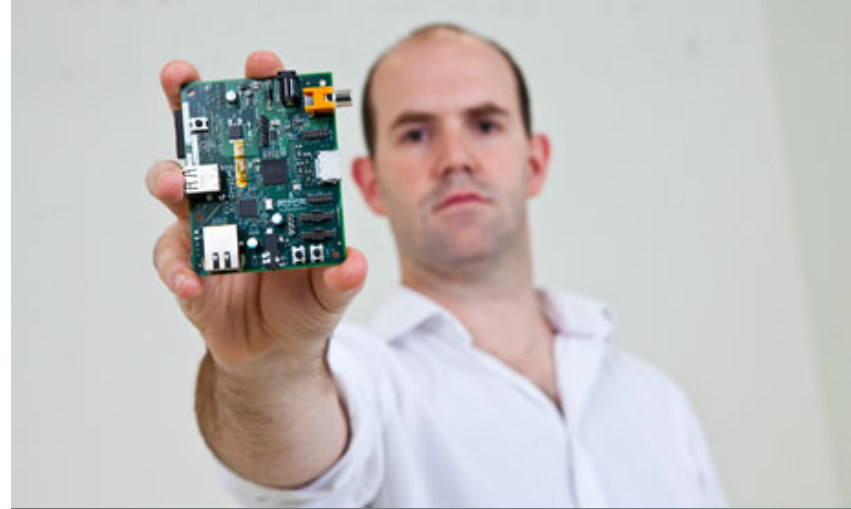
\$2-4 billion dollars in costs to the healthcare
industry



Eben Upton and the Raspberry Pi

“Design intended to inspire schoolchildren and adults to program sees overwhelming demand as first versions go on sale”

“Demand for Raspberry Pi, the British £22 computer, crashes website”



Source: *The Guardian*

Prabhu Subramanian and CoLearnr



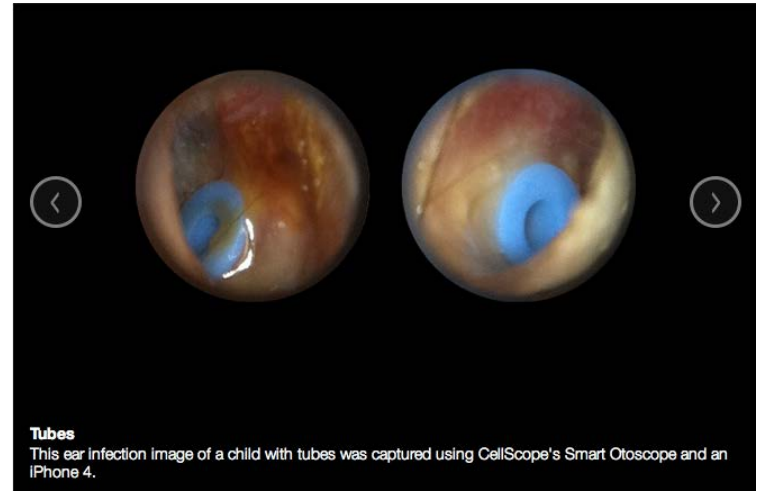
CoLearnr



Frugal healthcare: CellScope



Smart Otoscope in action with a Bay Area family.



Tubes
This ear infection image of a child with tubes was captured using CellScope's Smart Otoscope and an iPhone 4.

Photos: CellScope

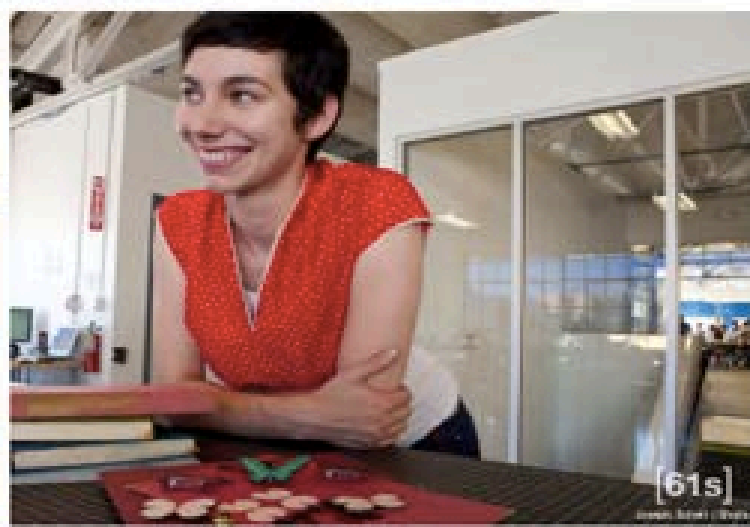
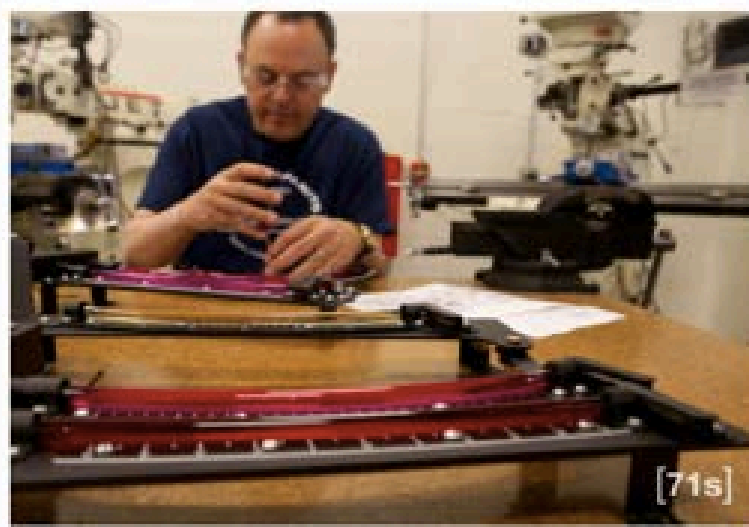
The Rise of DIY Manufacturing



- Welcome
- Membership
- Classes
- Events
- Facilities & Amenities
- TechShop Locations
- Equipment Reservation Calendars
- Services & Programs
- FAQs
- TechShop News
- Contact Us
- Job Openings

stay in touch

Promo Code?





Simprints: ID to Access Patient Records





Photos: EMBRACE



Photo: EMBRACE

The Maker Movement at the National Level

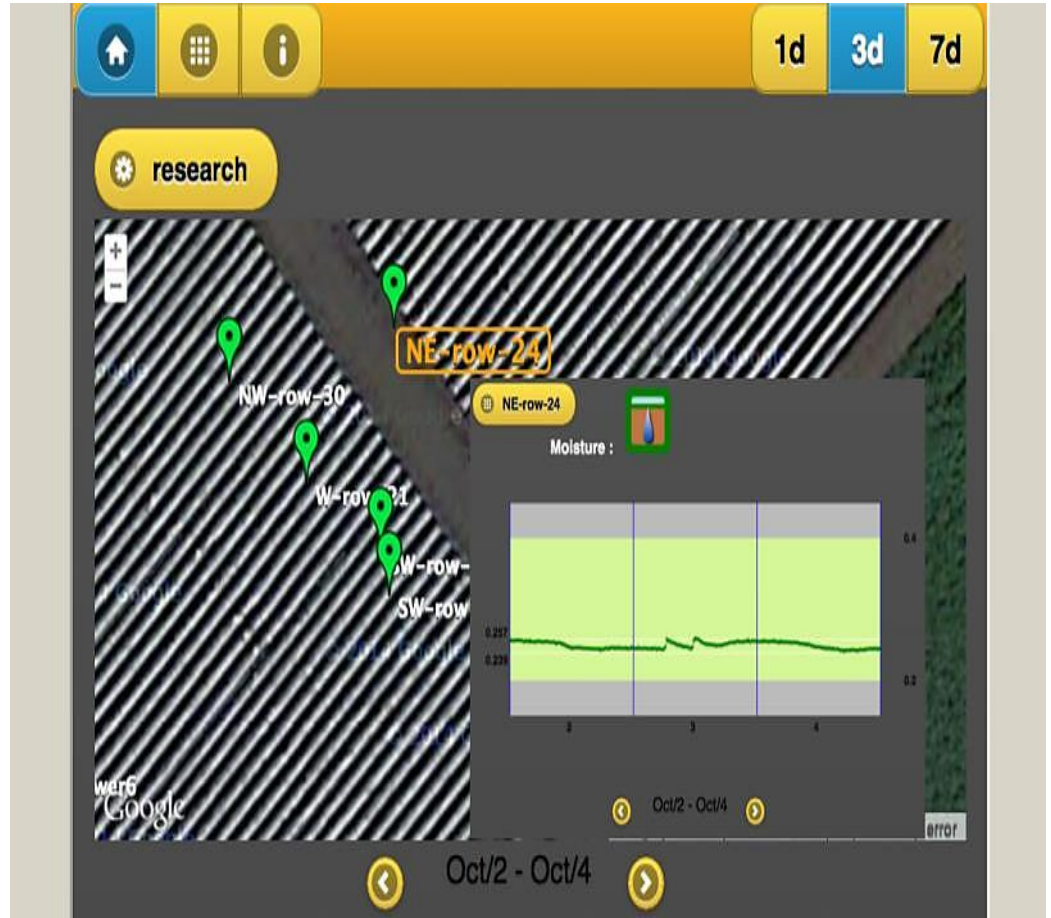


"Today's
Do-It-Yourself
is tomorrow's
Made in America"



Photo: WhiteHouse.gov

Frugal Agriculture: gThrive



FabLab Barcelona's Smart Citizen Kit

An electronic board based on Arduino equipped with the following sensors:

- Air Quality
- Temperature
- Sound
- Humidity
- Light Quantity



How Can Large Companies do Frugal Innovation?

The
Economist

From the authors of the ground-breaking bestseller
JUGAAD INNOVATION



INNOVATION

HOW TO DO BETTER
WITH LESS

NAVI RADJOU and JAIDEEP PRABHU

Foreword by PAUL POLMAN, CEO, Unilever



The Six Principles of Frugal Innovation

1. Engage & iterate
2. Flex your assets
3. Create sustainable solutions
4. Shape customer behavior
5. Co-create value with “prosumers”
6. Make innovative friends

Large Firms and Frugal Innovation

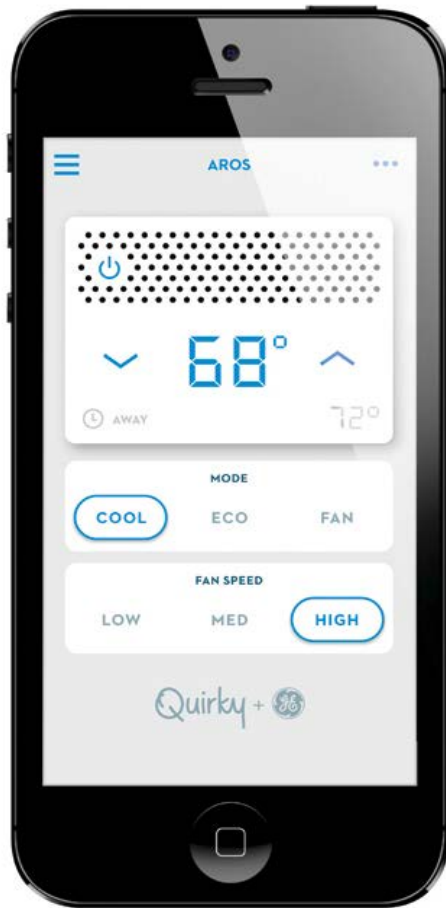


GE Taps Frugal Innovators Worldwide



COURTESY: QUIRKY

GE Taps Frugal Innovators Worldwide



Barclays Accelerator with TechStars

Techstars selects 10 promising global fintech startups

Start-ups are housed in an accelerator for 13 weeks

They are mentored by Barclays Bank personnel

They pitch to Barclays' strategic investment team

The new ventures stand to gain up to \$100,000 investment and \$200,000 partner perks

Conclusions

The Challenge for Large Organisations

Learn to do more with less

Learn to be agile

Learn to include excluded groups

The Challenge for Large Organisations

Give employees time and space to experiment

Engage with agile entrepreneurs

Create a jugaad mindset by engaging with emerging markets

The Challenge for Small Organisations

Learn to scale

Learn to partner with large organisations

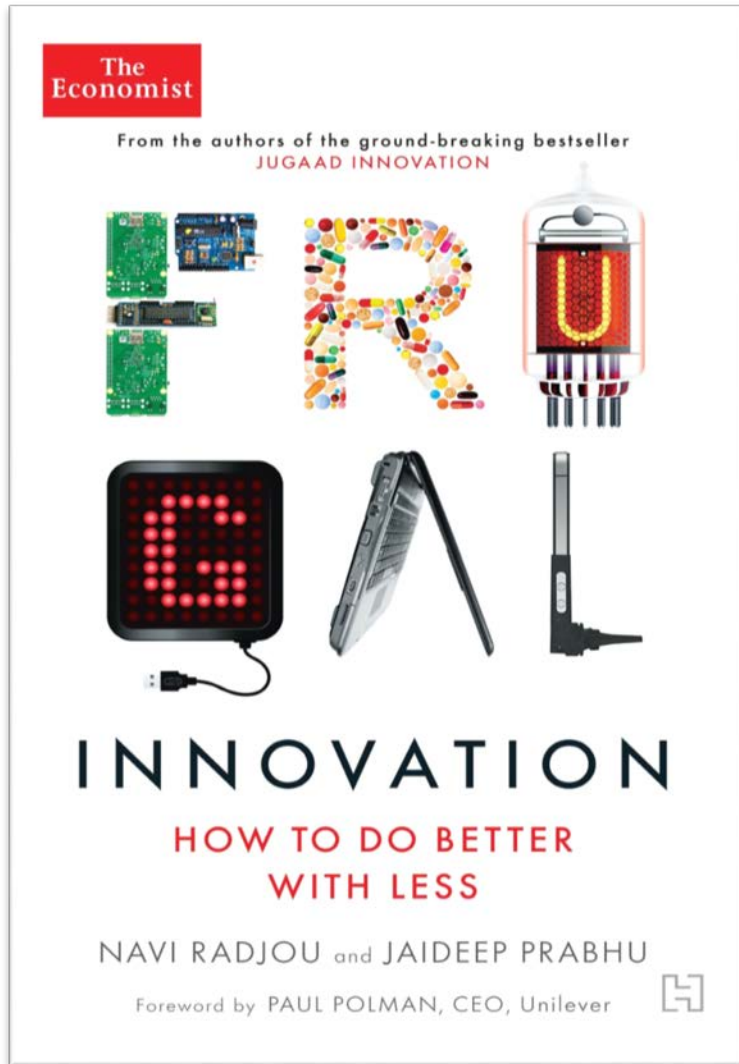
Conclusion

The world needs frugal, flexible, and inclusive innovation

UK firms can gain by engaging with emerging economies

Large and small firms can work together to improve lives everywhere

Discussion



Frugal Innovation Hub
<http://frugalinnovationhub.com>

@Frugal_Hub

@JaideepPrabhu